

# Maturity models and quality management



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## The Evolution of Six Sigma Processes and Current Criticisms [Affiliation]

Before the Industrial Revolution, quality was embedded into products; it was a source of pride for skilled craftspeople and something expected by customers. However, quality was sacrificed for interchangeable parts and greater yield during the Industrial Revolution, and variations in production created problems for the factory until Frederick W. Taylor stepped in with “scientific management”. Though manufacturing would never be holistic again, quality control departments were born. Statistical approaches to quality control, including new methods of inspection, sampling techniques, and economic analysis tools, were pioneered by Walter Shewhart, Harold Dodge, and George Edwards, among others, from Western Electric. Deming and Juran picked up the trail after World War II, and blessed the Japanese industry with statistical quality control and quality improvement processes. In America, the quality revolution began only in 1980, and Deming finally became known in his home country, though his techniques were used mostly for manufacturing. By the end of the 1980’s, quality efforts were embedded in services, and by the 1990’s in health care, government, and education (Evans, 2008, p. 10-14). Thus, quality became an indispensable aspect of management practices, and quality became customer-driven, pursued to meet or exceed customers’ needs (Evans, 2008, p. 6-7). Total Quality Management was born. It is said that quality remained in the limelight from the 1980’s-1990’s due to interest in Six Sigma (Evans, 2008, p. 8). In the mid-1980’s Bill Smith, a reliability engineer at Motorola, sold the concept to Motorola’s CEO, Robert Galvin. GE is the recognized benchmark for Six Sigma implementation (Evans, 2008, p. 94). Six Sigma is defined as “ a business improvement approach that seeks to find and eliminate causes of

defects and errors in manufacturing and service processes by focusing on outputs that are critical to customers and a clear financial return for the organization” (Evans, 2008, p. 92). The term “ six sigma” refers to a statistical measure that equals 3. 4 errors (defects per million opportunities) or less, where the goal is for all major processes to meet this level of capability. All Six Sigma projects involve: (1) a problem; (2) a process wherein the problem lies; and (3) one or more measures to quantify that gap, which can also be used to evaluate progress (Evans, 2008, p. 97). The major concepts of Six Sigma are: 1. Having a clear focus on overall strategic objectives and thinking in terms of the primary requirements of the business and the customer; 2. Depending on corporate sponsors or executive leaders to spearhead projects, support team activities, help smooth change transitions, and acquire resources; 3. Stressing quantifiable measures that can be applied to every facet of the organization from manufacturing and engineering to administration; 4. Identifying and using the right metrics that focus on results from the very start, to make room for incentives and accountability; 5. Extensive training before deployment to improve profitability, reduce non-value-added activities, and achieve cycle time reduction; 6. Developing highly qualified process improvement experts (called green, black, and master black belts), in charge of using tools and leading teams; and 7. Setting higher or stretch objectives (Evans, 2008, p. 94). The major criticism of Six Sigma is that companies cannot sustain improvements. In fact, recent studies show that almost 60% of all corporate Six Sigma projects fail to attain desired goals. This is because, like a metal spring that stretches, yields, and then fails when pulled with increasing force, teams can accommodate change for a limited length of time before reverting

back to old habits. Suggestions for improvement include extended supervision by a Six Sigma expert for each team, tying successful implementation to performance appraisals and incentives, limiting teams to six to nine members for projects lasting only six to eight weeks, and the direct participation of executives (Chakravorty, 2010). Other criticisms include the fact that there is nothing new about the tools used and its high cost (Urdhwareshe, 2000). In conclusion, Six Sigma, a process improvement model, evolved from many quality improvement efforts, and though there are news-worthy success stories, companies looking to implement its projects should be wary of some of its pitfalls. References Chakravorty, S. S. (2010, January 25). Where process-improvement projects go wrong, The Wall Street Journal. Retrieved from <http://online.wsj.com/article/SB10001424052748703298004574457471313938130.html>

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Urdhwareshe, H. (2000, Sept.). The Six Sigma approach, Quality & Productivity Journal. Retrieved from <http://www.symphonytech.com/articles/pdfs/sixsigma.pdf>